STADIUM SPONSORSHIPS: WHICH UNDERLYING DETERMINANTS ARE SIGNIFICANT IN APPRAISING A NAMING RIGHTS DEAL FOR A NORTH AMERICAN MAJOR LEAGUE SPORTS STADIUM?

A Thesis Presented to The Faculty of the Department of Economics and Business The Colorado College

In Partial Fulfilment of the Requirements for the Degree

Bachelor of Arts

By:

Winston Chodnicki

May 2023

STADIUM SPONSORSHIPS: WHICH UNDERLYING DETERMINANTS ARE SIGNIFICANT IN APPRAISING A NAMING RIGHTS DEAL FOR A NORTH AMERICAN MAJOR LEAGUE SPORTS STADIUM?

Winston Chodnicki

May 2023

Business Economics and Society

Abstract

This study looks into the specifics of corporate sponsoring of North American, professional sporting stadiums. The purpose of this study is to revaluate which underlying determinants influence a final sponsorship price. Prior studies by DeSchriver and Jensen (2003), Gerrard and Parent (2006), and Centracchio (2022) were referenced. There are many factors present when purchasing stadium naming rights, a hedonic pricing model is needed to account for said factors. Data was collected from each stadium currently used in the North American major sports leagues: the National Football League, National Basketball Association, National Hockey League, and Major League Baseball. An OLS regression was run for two equations, using 100 observations of current and past stadium naming rights deals. Variables found to be significant were the per capita median income of the stadium's county, the construction price of the stadium, the year the deal was signed, whether a team made the playoffs the season prior to the deal, whether a stadium hosts multiple tenants, and the deal's term.

<u>KEYWORDS</u>: (Naming Rights, Sponsorships, National Football League, National Basketball Association)

<u>JEL CODES</u>: (L83, Z23)

2

ON MY HONOR, I HAVE NEITHER GIVEN NOR RECEIVED UNAUTHORIZED AID ON THIS THESIS

Mendelm

Signature

Table of Contents

Abstract	2
List of Tables	5
List of Figures	5
Acknowledgments	5
1. Introduction	1
2. Literature Review	2
3. Theory and Methodology	3
3.1. Theory	3
3.2 Data	7
3.3 Methodology	9
4. Results	11
5. Conclusion	14
References	16

List of Tables

Table 1	4
Table 2	8
Table 3	10
Table 4	11
List of Figures	
Figure 1	1

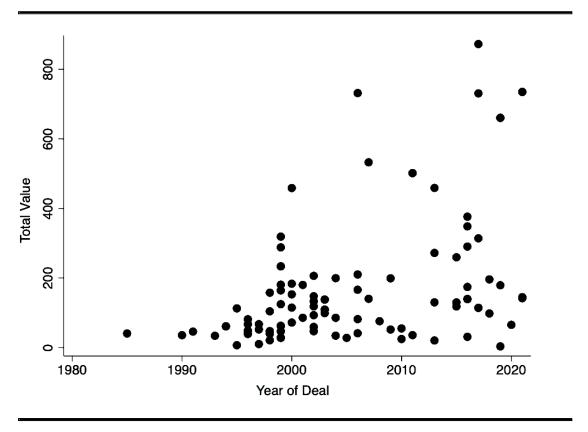
Acknowledgments:

This thesis would like to acknowledge the help of multiple people before its start. First, a thank you is owed to my parents, Ken and Marsha Chodnicki, for granting me the opportunity to attend such a prestigious school. Without their hard work, I would not be a Colorado College student. Secondly, a thank you is owed to McKinley Sielaff, Academic Engagement Librarian, for her help finding the initial data sets referenced in this thesis. Diellza Muriqi, a paraprofessional for the Colorado College Economics & Business Department, is also owed a thank you for her consistent help and effective teaching throughout the creation of this paper. Lastly, a thank you is owed to Aju Fenn, my thesis advisor, who guided myself throughout this process and taught me much about the world of sports economics.

Introduction

From 1985 to date, North American corporations have spent over 17 billion U.S. dollars on naming rights contracts for professional sports stadiums in North America. This thesis will investigate the underlying determinants of the value of sports stadium naming rights deals. These underlying determinants of value influence a sponsoring corporation's sales, brand recognition, and other monetary benefits. Through stadium naming rights deals, both sports franchises and corporations are able to benefit, hence, the increased frequency of deals over the last four decades. (Figure 1).

Figure 1: The total value of sponsorships over time



In the mid-20th century, stadiums and arenas were usually named in honor of past organizational members. In 1970, F. & M. Schaefer Brewing Company struck the

first stadium naming rights deal in North America (Broughton, 2021). This started a trend among multi-million dollar corporations, who began striking contracts with North American sports teams to purchase the naming rights of their stadiums.

Subsequently, the average price of naming rights deals has risen throughout the last four decades, with blockbuster deals popping up seemingly every couple of years (Evans, 2017). This thesis will examine the underlying determinants of the value of stadium sponsorships. The next section will contain a review of the academic literature in this field.

Literature Review

The prior literature says that stadium sponsorships are influenced by three, significant variables. These variables, loosely, are a stadium's surrounding population, its construction cost, and a team's win percentage. The prevailing literature uses a hedonic pricing model to examine the underlying of a naming rights deal.

Gerrard and Parent (2006) claim that bootstrapping is a present, ill-advised method in stadium sponsorships deal appraisals. Bootstrapping essentially creates synthetic data out of limited, existing data. Gerrard and Parent (2006) introduce the hedonic pricing model. This is a model adapted from real estate evaluation that looks at the surrounding aspects of a property. The purpose of a hedonic pricing model is to decompose a good into multiple aspects and individually appraise the impact of each aspect on the whole good's final value. Gerrard and Parent (2006) examine the deal's length and origin year, a stadium's background information, and the financial data of a hosting city. They believe these are potential for naming rights deals. They find that

a stadium's capacity, its host city's population, and average median income are significant determinants of the dollar value of the naming rights of a stadium.

DeSchriver and Jensen (2003), who look into price variation in stadium sponsorships, found that construction cost was also a significant variable. Centracchio (2022), which is a student thesis of its own, also found the construction cost of a stadium to be significant. DeSchriver and Jensen (2003) found that a "key determinant for whether a facility is named is the extent to which the existing name is recognized" (DeSchriver and Jensen, p. 360). This idea represents how corporations do not want to sponsor a stadium that has previously been known by the public as a different brand's stadium. This relates to brand prestige and recognition, which is touched on by Gerrard and Parent (2006).

Lastly, Chen and Zhang (2012), found a positive perception of stadium commercialization when an athletic program is in need of financial help. The two believe that favorable responses toward sponsorship deals are produced when a sporting program is in need of financial help. It can be argued that sports teams have become dependent on the income from naming rights deals (Centracchio, 2022) (Chen and Zhang, 2012). As the income from naming rights deals raises a team's overall budget each year, it gives the incentive for a team to strike a deal with the highest bidder.

Summarized, the prior literature says that naming rights deals are common in the North American sports world and that there are multiple facets of a deal that are considered by corporations.

Theory and Methodology

Theory

Two equations are used in the thesis. The first uses TOTALVALUE as the dependent variable.

$$\mathbf{Y}_{\text{TOTALVALUE}} = b_1 \text{CAPACITY} + b_2 \text{PCINCOME} + b_3 \text{TENANTS} + b_4 \text{PLAYOFF} + \\ b_5 \text{CONSTRUCTION} + b_6 \text{YEAROFDEAL} + b_7 \text{PCINCOME}^2 + b_8 \text{DEALTERM} + \mathbf{\epsilon} \dots$$
[1]

The second equation uses ANNUALVALUE as its dependent variable.

$$Y_{ANNUALVALUE} = b_1CAPACITY + b_2PCINCOME + b_3TENANTS + b_4PLAYOFF + b_5CONSTRUCTION + b_6YEAROFDEAL + b_7PCINCOME^2 + b_8DEALTERM + \epsilon ...$$

[2]

Table 1: Variable definitions

Variable	Definition
TOTALVALUE	The reported total cost of a deal, corrected for inflation using the U.S. Consumer Price Index.
ANNUALVALUE	The reported total cost of a deal, divided by the length of the deal in years. Corrected for inflation using the U.S. Consumer Price Index.
DEALTERM	Reported length in years of a deal
YEAROFDEAL	The year a naming rights deal was signed
CONSTRUCTION	Construction price of a stadium, corrected for inflation using the U.S. Consumer Price Index.
PLAYOFF	Dummy variable (1=playoff appearance year prior to deal)
TENANTS	Dummy variable (1=multiple sports teams home to host stadium)
INCOME	FRED reported estimated income for the host stadium's respective county. Corrected for inflation using the U.S. Consumer Price Index.
POPULATION	FRED reported resident population for the host stadium's respective county. Corrected for inflation using the U.S.

Consumer Price Index.

PCINCOME Per capita estimated median income. INCOME divided by

POPULATION

PCINCOME² Square of PCINCOME

CAPCITY Stadium capacity at the time of a deal's signing

The dependent variable used in equation 1 was TOTALVALUE, which is the reported total value a corporation paid for a deal. The variable is corrected for inflation using the U.S. Consumer Price Index. The total value of a deal was the dependent variable in one of Gerrard and Parent's (2006) models.

The dependent variable used in equation 2 was ANNUALVALUE, which is the total value of a sponsorship divided by the length of the deal in years.

ANNUALVALUE is used in the second equation as it represents the average price of a sponsorship. This varies from TOTALVALUE which does not account for the length of a deal. This variable was used as the dependent variable in one of Gerrard and Parent's (2006) models and in the model of Centracchio's paper (2022).

DEALTERM is the reported length of a deal; some corporations strike short, three to five-year deals in order to observe if the deal is subjectively beneficial. Corporations with larger spending capital, such as banks or insurance companies, strike longer deals in order to assure the residing public is subjected to the company name for decades. This variable is specifically meant for equation 1, it aims to see if longer deal length affects the total value. This variable was used by Gerrard and Parent (2006) as well.

YEAROFDEAL accounts for the year a naming rights deal was made. As this data set includes deals starting from 1985, this variable's purpose is to discern the change in cost between older and newer deals. YEAROFDEAL is similar to variables used by Gerrard and Parent (2006) and Centracchio (2022). Their variables account for whether a deal was made before or after a certain year.

CONSTRUCTION is the reported construction price of a stadium at the time of building completion. The variable is corrected for inflation using the U.S. Consumer Price Index. Centracchio (2022) and DeSchriver and Jensen (2003) found this variable to be significant. A large construction price could represent a larger seating capacity, larger overall space, and more inventive architecture. Brands ideally want to be associated with new and exciting stadiums. More seating capacity also means more exposure to the brand's name as it allows for more fans in the stadium

The variable PLAYOFF represents whether a team made their respective league's playoffs the year before the announcement of their stadium's naming rights deal. Centracchio (2022) and DeSchriver and Jensen (2003) had similar variables, which accounted for a team's winning percentage in years before a deal announcement. The idea behind this variable is to see whether corporations wish to be associated with playoff contention teams as they will have higher attendance rates. (Glass, 2003)

TENANTS is a dummy variable for whether a stadium was hosting multiple tenants at the time of the deal. Tenants were categorized as NCAA teams or less popular professional sporting leagues such as the Arena Football League, the National Lacrosse League, Major League Soccer, et cetera. Multiple tenants would be expected to be a significant variable as it provides an alternate stream of fans separate

from the stadium's main tenant's fan base. This, again, means more brand exposure for the sponsoring company.

PCINCOME accounts for the per capita estimated income of the county a stadium resides in. This variable was calculated by dividing a county's estimated median income by its resident population. Gerrard and Parent (2006), Deschriver and Jensen (2003), and Centracchio (2022) all used median income and resident population as variables in their study. The idea behind all of these mentioned variables is that stadiums with a high county median income and population are more attractive to corporations. A higher population allows for a greater amount of fan attendance and a higher median income gives said fans a higher purchasing power that can be used towards a sponsoring company's product.

PCINCOME² is the square of PCINCOME. This variable is an attempt to linearize the data found in PCINCOME.

CAPACITY is a stadium's seating capacity at the time of the deal. This variable was used by Gerrard and Parent (2006) and is expected to be significant as it directly correlates to more brand exposure due to more fans being able to fit in a stadium. Brand exposure is a corporation's main objective when signing naming rights deals

Data

The data set contains the total value and annual value of stadium naming rights deals for 100 major league sports stadiums in North America. Deals range from 1985 to 2021. Stadiums with estimated financial details of naming rights were excluded from the data set. Stadiums that qualified for this data set were those with disclosed financial terms and lengths of the deal. The current study has more

observations than some previous work, Centracchio (2022) and DeSchriver and Jensen (2003). The stadiums in this data set are from the National Football League, the National Hockey League, the National Basketball Association, and Major League Baseball.

Wikipedia pages provided accurate data for the CAPACITY, TENANTS, and CONSTRUCTION variables. Wikipedia has a page for every active NFL, MLB, NHL, and NBA Stadium. Wikipedia states that this data is collected "whenever possible" from the "official website of the stadium" ("List of stadiums by capacity", 2023). A total of 100 observations were able to be found via this method of research. CONSTRUCTION values were corrected for inflation by using the PCI index provided by Fred.stlouisfed.org. All monetary values are expressed in 2022 U.S. dollars using the CPI as the deflator.

Data for the TOTAL VALUE, ANNUAL VALUE, DEALTERM, and YEAROFDEAL were obtained from the following sources: Ballparks.com, financial news sites, sports networks, local newspapers, and from the appendix of Gerrard and Parent's study. Despite these sources, the financial terms of a deal are normally not widely reported. This required the referencing of smaller, less monitored websites. The website Ballparks.com, was frequently used as it provided financial recordings of naming rights deals that could not be found elsewhere. While it was hard to find information about websites of the two listed owners, multiple academic studies have cited this website, attesting to its accuracy (Leadley and Zygmont, 2005).

PCINCOME and PCINCOME² were collected by using Fred.stlouisfed.org.

This national database was used to collect a stadium's host county resident population and estimated median income. These two variables were corrected for inflation by

using the PCE index provided by fred.stlouisfed.org. Statistics for teams in Canada were collected on statcan.gc.ca, nominal values were copied down in the U.S. value of the dollar and subsequently deflated. Estimated median income was divided by resident population to create the variable PCINCOME.

Table 2: Summary of Independent Variables

Independent Variable	Mean	Standard Deviation
DEALTERM	19 (years)	6.45
YEAROFDEAL	2005.67	8.80
CONSTRUCTION	607.5 (millions)	790.65
PLAYOFF	.43	.50
ΓENANTS	.63	.49
NCOME	41461.63	2299.25
OPULATION	2316413	257462.30
CINCOME	.0926556	.027
PCINCOME ²	.0689671	.04
CAPCITY	41451.83	2299.25

Methodology

In keeping with Gerrard and Parent (2006) and Centracchio (2022), this study uses a random effects OLS regression with heteroskedastic robust standard errors. The functional form that best fits these data is the right-hand side, semi-logarithmic regression (Table 2).

Both equations were tested for heteroskedasticity; the White test rejected the null hypothesis of homoscedasticity in both equations. The standard errors were calculated using the Huber-White correction.

When viewing the correlation between variables, there is little concern for variables being correlated with each other, except for PCINCOME and PCINCOME². Values over .5000 are a mathematical indicator for correlation between variables. The correlation coefficients are shown in table 3.

Table 3: Data Correlation Table

	TOTALVALUE	CAPACITY	PCINCOME	TENANTS	PLAY-OFF	CONSTRUCTION	YEAROFDEAL	DEALTERM	PCINCOME ²
TOTALVALUE	1.0000								
CAPACITY	0.1212	1.0000							
PCINCOME	0.3553	0.0404	1.0000						
TENANTS	0.1698	-0.1247	-0.0063	1.0000					
PLAYOFF	0.0229	-0.2336	-0.0231	0.2891	1.0000				
CONSTRUCTION	0.5307	0.2399	-0.0290	0.1343	0.1603	1.0000			
YEAROFDEAL	0.4548	0.1072	0.1204	0.1370	0.1550	0.3667	1.0000		
DEALTERM	0.2683	-0.0193	0.1093	-0.1453	-0.0315	0.1296	-0.1017	1.0000	
PCINCOME ²	0.3225	0.0432	0.9587	-0.0604	-0.0600	-0.0137	0.0590	0.1624	1.0000

Results

The regression results for equations 1 and 2 are presented in table 4. The column labelled TOTALVALUE shows the results for table 1 and the column labelled annual price shows the results for table 2. Each column shows the respective regression coefficients with the accompanying standard errors in parentheses below.

Table 4: Regression Results

Independent Variables	TOTALVALUE	ANNUALPRICE
CAPACITY	-0.000245	-7.63e-07
	(0.000599)	(2.98e-05)
PCINCOME	415.8	10.42**
	(260.8)	(4.244)
TENANTS	51.84*	3.591***
	(27.80)	(1.247)
PLAYOFF	-48.84*	-2.776*
	(29.09)	(1.471)
CONSTRUCTION	0.101***	0.00484***
	(0.0183)	(0.000823)
YEAROFDEAL	6.134**	0.352***
	(2.332)	(0.100)
DEALTERM	7.030***	0.0682
	(1.396)	(0.0856)
PCINCOME ²	-113.3	0.119
	(144.4)	(-9.243739)
Constant	-12,352***	-702.4***
	(4,664)	(200.2)
Observations	100	100
R-squared	0.543	0.541

(Robust standard errors in parentheses)

^{***} p<0.01, ** p<0.05, * p<0.1

CAPACITY was found to be insignificant in both equations. This is contrary to Gerrard and Parent (2006). Insignificance could be due to the dataset including differing sports leagues. For example, NFL stadiums average a capacity of 70,587.15 seats while NBA stadiums have an average capacity of 18,928.70 seats. The disparity of seating capacities across leagues does not allow for the variable to be interpreted accurately. Considering all North American major league sporting stadiums, this variable is not significant in determining the final price of the sponsorship deal. There is a possibility that CAPACITY is significant when all stadiums viewed have a similar range of seating capacity.

PCINCOME was found to be insignificant in equation 1 but significant in equation 2. Gerrard and Parent (2006) claimed that corporations enter into naming rights agreements with teams that are located in high resident population areas with a high estimated median income. When those two factors are high, in theory, it leads to more brand exposure and citizen purchasing power. Both of Gerrard and Parent's equations, which share dependent variables with this thesis, found income to be significant at the five percent level. Centracchio (2022) found population to be significant and income to be insignificant when the annual value of a deal was the dependent variable. Gerrard and Parent (2006) found population to be significant as well. This is of note since PCINCOME is the estimated median income of a county divided by population.

TENANTS were found to be significant in both equation 1 and 2. In equation 1, the variable was significant at the ten percent level. In equation 2, the variable was significant at the five percent level. This again relates to the original theory that the ideal sponsorship maximizes the number of eyes on the sponsoring corporation's

name. Multiple tenants mean that there are multiple fan groups entering a stadium throughout a calendar year and thus, more eyes on the sponsoring corporation's name.

PLAYOFF was found to be significant in both equation 1 and 2. In equation 1, the variable was significant at the ten percent level. In equation 2, the variable was found to be significant at the five percent level. A team coming off a playoff appearance season has a good chance of attaining higher attendance rates (Glass, 2003). Higher attendance means more fans in the stadium and thus, more brand exposure for the sponsoring corporation.

CONSTRUCTION was extremely significant in both equations, both having significance at the one percent level. This is related to the idea of corporations wanting to be associated with grand, inventive stadiums. The higher the construction cost, the higher likelihood that a stadium is large and well-built, meaning that corporations want to be associated with the stadium's architectural prestige. This variable was also found to be significant by Centracchio (2002) and DeSchriver and Jensen (2003).

YEAROFDEAL was found to be significant at the five percent level in both equations. This can be explained by the rise of pricey stadium naming rights deals throughout the last four decades (Figure 1). Larger deals have caused the average cost of a naming rights deal to increase over the years. Consequently, paying a larger price tag for a sponsorship has become the standard. So, the more recent the deal, the higher the total and average cost

DEALTERM was found to be significant in equation 1 but not in equation 2. For equation 1, results can be described as intuitive. In order to align with industry-average prices, deals made for a longer duration of time will have a higher total value. This thesis found that the average price paid per year by corporations was

roughly \$10 million. If a corporation signs a forty-year, \$1 million deal, then a corporation signing a four-year deal must pay \$40 million a year to land around the average price per year of \$10 million. So, a longer deal requires a higher total price. Inversely, equation 2 is intuitively insignificant as the equation's dependent variable is the average price paid per year. Hence, the length of a deal does not greatly affect the dependent variable as it is already divided by a deal's term.

PCINCOME² was found to be insignificant in both equations. This suggests that naming rights values are not a quadratic function of median income.

Conclusion

This study, like past studies conducted on the topic, used an OLS regression to analyze its set of data. The purpose was to find which underlying determinants are significant in the amount a corporation is willing to pay for a stadium's naming rights. This study used two measures of the dependent variable, the total value of a deal and the annual value of a deal.

Equation 1 found five variables to be significant: the dummy variable for whether a stadium host multiple tenants (TENANTS), the dummy variable for whether a stadium's main team made the playoffs the year prior to a deal (PLAYOFF), the term of a deal (DEALTERM), the construction price of a stadium (CONSTRUCTION), and the year the deal was closed (YEAROFDEAL).

Equation 2 found five variables to be significant: TENANTS, PLAYOFF, CONSTRUCTION, YEAROFDEAL, and the per capita median income of a stadium's host county (PCINCOME).

Compared to prior academic research, Centracchio (2022) found construction cost to be significant when using the same dependent variable as equation 2. Gerrard

and Parent (2006) found the deal term to be significant when using the same dependent variable as equation 1.

The amount of underlying determinants that were found to be significant are in alignment with the idea of a hedonic pricing model. The model alleges that every product has multiple factors that make it worth its cost. This thesis viewed twenty-seven variables in total. When purchasing naming rights, a corporation should take similar steps to this thesis. Thus, many variables should be looked at to create a well-approached purchasing plan.

Limitations

This thesis faced multiple limitations throughout its construction. There are only 111 stadiums across the NBA, NHL, MLB, and NFL. In combination with that number, many naming rights deals have undisclosed financial details. It was hard to find more than 100 naming rights deals examples with full, disclosed financial details

Lastly, it is to be noted that the PLAYOFF variable may be limiting. In North American major sports leagues, a team could have a winning record in the regular season but still not make the playoffs. A team could still be competitive in its league and attract a steady stream of fans without making the playoffs. This variable should not be interpreted as a standard for determining whether a team is a winning program or not.

References

2021-22 Dallas Mavericks schedule. Basketball. (n.d.). Retrieved February 21, 2023, from https://www.basketball-reference.com/teams/DAL/2022 games.html

Anderson, D. (1997, April 3). *A stadium by any other name? no.* The New York Times. Retrieved February 22, 2023, from

- https://www.nytimes.com/1997/04/03/sports/a-stadium-by-any-other-name-no.html
- Aust, S. (2011, September 7). *MetLife inks \$400 million naming-rights deal for Meadowlands Stadium*. Signs of the Times. Retrieved February 21, 2023, from https://signsofthetimes.com/metlife-inks-400-million-naming-rights-deal-meadowlands-stadium/
- Ballpark facts and figures: Cincinnati Reds. MLB.com. (n.d.). Retrieved February 21, 2023, from https://www.mlb.com/reds/ballpark/information/facts
- Bauder, B., & Boren, J. (n.d.). *Select the subscription that's best for you*. Welcome. Retrieved February 21, 2023, from https://archive.triblive.com/local/pittsburgh-allegheny/ppg-buys-naming-rights-to-consol-energy-center-for-20-years/
- Beadle, P. (2020, October 6). *Is a naming rights deal worth the price?* Caravel Marketing. Retrieved February 22, 2023, from https://www.caravelmarketing.com/is-a-naming-rights-deal-worth-the-price/
- Bhasin, K. (n.d.). Why do so many banks put their names on stadiums? Business Insider. Retrieved February 22, 2023, from https://www.businessinsider.com/banks-stadium-naming-rights-2011-2
- Bizjournals.com. (n.d.). Retrieved February 22, 2023, from https://www.bizjournals.com/losangeles/stories/2009/10/19/daily5.html
- Broughton, D. (2021, August 2). *Naming-rights deals thrive*. Sports Business Journal. Retrieved February 22, 2023, from https://www.sportsbusinessjournal.com/Journal/Issues/2021/08/02/Portfol io/Sports-marketing.aspx
- Brown, M. (2018, December 19). *Seattle Mariners officially partner with T-Mobile for 25-year, \$87.5m ballpark naming rights*. Forbes. Retrieved February 21, 2023, from https://www.forbes.com/sites/maurybrown/2018/12/19/seattle-mariners-of ficially-partner-with-t-mobile-for-25-year-87-5m-ballpark-naming-rights/
- Buxbaum, E. (n.d.). *Mets and the Citi: \$400 million for stadium-naming rights irks some*. CNN. Retrieved February 21, 2023, from https://www.cnn.com/2009/US/04/13/mets.ballpark/
- Cable News Network. (n.d.). *The best and Worst Stadium naming rights deals*. CNNMoney. Retrieved February 22, 2023, from https://money.cnn.com/galleries/2011/fortune/1103/gallery.stadium_name s.fortune/index.html

- Carp, S. (2020, October 6). *Report: Orlando Magic Tap Legends to sell Amway Center naming rights*. SportsPro. Retrieved February 22, 2023, from https://www.sportspromedia.com/news/orlando-magic-amway-center-naming-rights-legends/
- Carp, S. (2021, March 9). San Diego padres take Petco Park naming rights deal up to 2027. SportsPro. Retrieved February 21, 2023, from https://www.sportspromedia.com/news/san-diego-padres-petco-park-naming-rights-deal-2027/
- CBC/Radio Canada. (2002, February 27). *Molson Centre renamed Bell Centre* | *CBC sports*. CBCnews. Retrieved February 21, 2023, from https://www.cbc.ca/sports/hockey/molson-centre-renamed-bell-centre-1.3 23185
- CBS Interactive. (2011, November 3). *Bank Atlantic Center to be renamed*. CBS News. Retrieved February 22, 2023, from https://www.cbsnews.com/miami/news/bank-atlantic-center-to-be-rename d/
- Centracchio, B. (1970, January 1). *Corporate naming rights for collegiate athletic venues: An analysis of valuation, attendance, and donations*. Carolina Digital Repository. Retrieved February 22, 2023, from https://cdr.lib.unc.edu/concern/dissertations/5d86p903s
- Chen, K. K., & Zhang, J. J. (2011). Examining consumer attributes associated with collegiate athletic facility naming rights sponsorship: Development of a theoretical framework. *Sport Management Review*, *14*(2), 103–116. https://doi.org/10.1016/j.smr.2010.10.001
- Davis, S. (n.d.). Warriors president Rick Welts explains why their new \$1.4 billion self-financed stadium was a one-of-a-kind situation other teams can't replicate. Business Insider. Retrieved February 22, 2023, from https://www.businessinsider.com/how-chase-center-built-warriors-cost-pe rfect-storm-2019-3
- ESPN Internet Ventures. (n.d.). *ESPN.com: SPORTSBUSINESS Stadium naming rights*. ESPN. Retrieved February 21, 2023, from https://www.espn.com/sportsbusiness/s/stadiumnames.html
- Estep, T. (2018, August 29). *Hawks, state farm ink one of richest naming rights deals in NBA*. ajc. Retrieved February 22, 2023, from https://www.ajc.com/sports/hawks-state-farm-ink-one-richest-naming-rig hts-deals-nba/jweyW5E5gP0gjbaELppMSM/
- Evans, P. (2017, September 4). *Breaking the bank: Scotiabank's Big Bet on Toronto's arena naming rights changes the game* | *CBC News*. CBCnews. Retrieved February 21, 2023, from https://www.cbc.ca/news/business/scotiabank-arena-naming-rights-1.4271 688

- Evans, P. (2017, September 4). Breaking the bank: Scotiabank's Big Bet on Toronto's arena naming rights changes the game | CBC News. CBCnews. Retrieved February 22, 2023, from https://www.cbc.ca/news/business/scotiabank-arena-naming-rights-1.4271 688
- Facts and figures: American Family Field: Milwaukee brewers. MLB.com. (n.d.). Retrieved February 21, 2023, from https://www.mlb.com/brewers/ballpark/facts-figures
- Federal Reserve Bank of St. Louis. (n.d.). *Federal Reserve Economic Data: Fred: St. louis fed.* FRED. Retrieved February 21, 2023, from https://fred.stlouisfed.org/
- Flagg, M. (1993, October 17). Arrowhead's thirsty for more water sales:

 Advertising: It is putting its name on the Anaheim Arena to try to improve business. Los Angeles Times. Retrieved February 22, 2023, from https://www.latimes.com/archives/la-xpm-1993-10-17-fi-47001-story.htm 1
- Gano, R. (2016, March 26). *Comiskey Park renamed U.S. Cellular Field*. Midland Daily News. Retrieved February 22, 2023, from https://www.ourmidland.com/news/article/Comiskey-Park-Renamed-U-S-Cellular-Field-7172908.php
- Ge, Q., Humphreys, B. R., & Zhou, K. (2017). Are fair weather fans affected by weather? rainfall, habit formation and live game attendance. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3014715
- Gerrard, B., Parent, M., & Slack, T. (1970, January 1). What drives the value of stadium naming rights? A hedonic-pricing approach to the valuation of sporting intangible assets: Semantic scholar. International Journal of Sport Finance. Retrieved February 22, 2023, from https://www.semanticscholar.org/paper/What-Drives-the-Value-of-Stadiu m-Naming-Rights-A-to-Gerrard-Parent/1ec2379f91be7c3385a8daa3dcb4 b64f9cbbf34e
- Gibson, D. (2019, February 15). *American family to pay twice as much as MillerCoors for naming rights of Milwaukee Stadium*. Brew Crew Ball. Retrieved February 22, 2023, from https://www.brewcrewball.com/2019/2/15/18225571/milwaukee-brewers-american-family-pays-twice-as-much-as-millercoors-for-naming-rights
- Government of Canada, Statistics Canada. (2022, August 9). Census families by family type and family composition including before and after-tax median income of the family. Retrieved February 21, 2023, from https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1110001701&pick Members%5B0%5D=1.1&pickMembers%5B1%25
- JEL classification codes. (n.d.). Retrieved February 22, 2023, from https://cran.r-project.org/web/classifications/JEL.html

- Jones, R. (2022, October 14). *MLS 2022 commercial guide: Every franchise, every sponsor, all the major TV deals*. SportsPro. Retrieved February 21, 2023, from https://www.sportspromedia.com/analysis/mls-commercial-guide-2022-se ason-sponsorship-media-rights-deals/
- Long, M. (2016, August 24). *Names and numbers: Your handy NFL stadium naming rights guide*. SportsPro. Retrieved February 21, 2023, from https://www.sportspromedia.com/analysis/your_handy_nfl_naming_rights_guide/
- Molski, M. (2022, June 30). *Which professional sports teams share stadiums?* RSN. Retrieved February 22, 2023, from https://www.nbcsports.com/bayarea/warriors/which-professional-sports-te ams-share-stadiums
- Montreal, Canada Metro Area Population 1950-2023. MacroTrends. (n.d.). Retrieved February 21, 2023, from https://www.macrotrends.net/cities/20384/montreal/population
- Most Expensive Naming Rights Deals For Major League Ballparks. From This Seat | Seat Reviews for Sports Stadiums and Arenas. (n.d.). Retrieved February 22, 2023, from https://www.fromthisseat.com/index.php/blog/19324-most-expensive-nam ing-rights-deals-for-major-league-ballparks
- Most Expensive Naming Rights Deals For NHL Arenas. From This Seat | Seat Reviews for Sports Stadiums and Arenas. (n.d.). Retrieved February 22, 2023, from https://www.fromthisseat.com/blog/19323-most-expensive-naming-rights-deals-for-nhl-arenas.html
- Munsey and Suppes. (n.d.). National Basketball Association Arenas. Retrieved February 22, 2023, from http://basketball.ballparks.com/
- Munsey and Suppes. (n.d.). *National Football League stadiums*. National Football League Stadiums. Retrieved February 21, 2023, from http://football.ballparks.com/
- Muret, D. (2017, August 24). *Globe Life stays with Rangers, signs 25-year deal for New Park worth \$11M annually*. Sports Business Journal. Retrieved February 22, 2023, from https://www.sportsbusinessjournal.com/Daily/Issues/2017/08/24/Facilities/Globe-Life-Rangers.aspx
- Murphy, B. (2022, September 28). *Hurricanes negotiating arena naming rights extension with PNC*. WRALSportsFan.com. Retrieved February 21, 2023, from https://www.wralsportsfan.com/hurricanes-negotiating-arena-naming-righ ts-extension-with-pnc/20495758/

- New for 2014: Gila River Arena. Arena Digest. (2014, September 11). Retrieved February 21, 2023, from https://arenadigest.com/2014/09/11/new-2014-gila-river-arena/
- Newcomb, T. (n.d.). *NFL now has three legitimate Los Angeles Stadium sites in play*. Retrieved February 22, 2023, from https://www.si.com/nfl/2014/02/05/los-angeles-nfl-stadium
- NRG stadium. Walter P Moore. (2020, November 13). Retrieved February 21, 2023, from https://www.walterpmoore.com/projects/nrg-stadium
- Patrizio, A. (2001, April 2). *Welcome to Dot-Bankrupt Stadium*. Wired. Retrieved February 22, 2023, from https://www.wired.com/2001/04/welcome-to-dot-bankrupt-stadium/
- Perry Apr 10, D. (2018, July 11). *The White Sox Ballpark in Chicago that never was and could have changed history*. CBSSports.com. Retrieved February 21, 2023, from https://www.cbssports.com/mlb/news/the-white-sox-ballpark-in-chicago-t hat-never-was-and-could-have-changed-history/
- *Press releases*. Ryman Hospitality Properties Inc. (n.d.). Retrieved February 22, 2023, from https://ir.rymanhp.com/news-releases
- Schoettle, A. (2015, September 22). *Lucas: Colts stadium naming rights deal a bargain*. Indianapolis Business Journal. Retrieved February 21, 2023, from https://www.ibj.com/the-score-anthony-schoettle/54974-lucas-colts-stadiu m-naming-rights-deal-a-bargain
- Sports Business Journal. (2013, March 27). *HP wants out of naming-rights deal for Sharks' Arena; sap could take over*. Sports Business Journal. Retrieved February 22, 2023, from https://www.sportsbusinessjournal.com/Daily/Issues/2013/03/27/Facilities/HP-Pavilion
- Sports Business Journal. (n.d.). *Sports business journal*. Sports Business Journal. Retrieved February 22, 2023, from https://www.sportsbusinessjournal.com/
- Sports Business Journal. (n.d.). *WILD FEELING ENERGIZED AFTER NAMING-RIGHTS DEAL WITH XCEL*. Sports Business Journal. Retrieved February 22, 2023, from https://www.sportsbusinessjournal.com/
- SportsPro. (2022, October 14). *NBA 2022/23 commercial guide: Every team, the key sponsors and the major TV deals*. SportsPro. Retrieved February 21, 2023, from https://www.sportspromedia.com/analysis/nba-2022-23-season-guide-ever y-team-sponsors-tv-rights-social-media/

- Stites, A. (2022, November 3). *Tiaa Bank announces sale, Jaguars Stadium name to change*. USA Today. Retrieved February 21, 2023, from https://jaguarswire.usatoday.com/2022/11/03/jaguars-tiaa-bank-field-nam e-change/
- Strozniak, P. (2019, June 26). *Executive gets seven years for pocketing millions of CU's naming rights money*. Credit Union Times. Retrieved February 22, 2023, from https://www.cutimes.com/2019/06/26/executive-gets-seven-years-for-pocketing-millions-of-cus-naming-rights-money/?slreturn=20230101221920
- Styche, A. (n.d.). Bizjournals.com. Retrieved February 21, 2023, from https://www.bizjournals.com/chicago/news/2016/11/06/u-s-cellular-paid-t o-get-out-of-white-sox-deal.html
- Suppes, B. A. L. L. P. A. R. K. S. by M. and. (n.d.). *Scotia Saddledome*. Scotiabank Saddledome. Retrieved February 22, 2023, from http://hockey.ballparks.com/NHL/CalgaryFlames/index.htm
- Suppes, B. A. L. L. P. A. R. K. S. by M. and. (n.d.). United Center. Retrieved February 22, 2023, from http://hockey.ballparks.com/NHL/ChicagoBlackhawks/index.htm
- *T-mobile park: Seattle mariners*. MLB.com. (n.d.). Retrieved February 21, 2023, from https://www.mlb.com/mariners/ballpark
- Trex, E. (2008, November 27). *A brief history of stadium naming rights*. Mental Floss. Retrieved February 22, 2023, from https://www.mentalfloss.com/article/20239/brief-history-stadium-naming-rights
- Wikimedia Foundation. (2019, March 24). *1989 NBA playoffs*. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1989_NBA_Playoffs
- Wikimedia Foundation. (2019, March 24). *1998 NBA playoffs*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/1998 NBA Playoffs
- Wikimedia Foundation. (2019, March 24). *1998 NBA playoffs*. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1998 NBA Playoffs
- Wikimedia Foundation. (2019, March 24). 2001 NBA playoffs. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/2001_NBA_Playoffs
- Wikimedia Foundation. (2019, March 24). 2002 NBA playoffs. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/2002 NBA Playoffs

- Wikimedia Foundation. (2022, December 12). *1993 Stanley Cup playoffs*. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1993 Stanley Cup playoffs
- Wikimedia Foundation. (2022, December 31). 2002 Major League Baseball season. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/2002_Major_League_Baseball_season
- Wikimedia Foundation. (2022, December 31). 2002 Major League Baseball season. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/2002 Major League Baseball season
- Wikimedia Foundation. (2022, December 31). 2005 Major League Baseball season. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/2005 Major League Baseball season
- Wikimedia Foundation. (2022, November 11). 1992 Stanley Cup playoffs. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1992_Stanley_Cup_playoffs
- Wikimedia Foundation. (2023, February 11). *1999 Stanley Cup playoffs*. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1999_Stanley_Cup_playoffs
- Wikimedia Foundation. (2023, February 12). *Empower field at Mile High*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/Empower_Field_at_Mile_High
- Wikimedia Foundation. (2023, February 12). *Guaranteed rate field*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/Guaranteed Rate Field
- Wikimedia Foundation. (2023, February 13). 2001 Major League Baseball postseason. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/2001 Major League Baseball postseason
- Wikimedia Foundation. (2023, February 14). *Citizens Bank Park*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/Citizens_Bank_Park
- Wikimedia Foundation. (2023, February 19). *Great American Ball Park*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/Great American Ball Park
- Wikimedia Foundation. (2023, February 2). 1997 Major League Baseball postseason. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1997_Major_League_Baseball_postseason
- Wikimedia Foundation. (2023, February 2). 1997 Major League Baseball postseason. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1997 Major League Baseball postseason

- Wikimedia Foundation. (2023, February 2). 1999 Major League Baseball postseason. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1999_Major_League_Baseball_postseason
- Wikimedia Foundation. (2023, February 2). 2003 Major League Baseball postseason. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/2003_Major_League_Baseball_postseason
- Wikimedia Foundation. (2023, February 20). *1984 NBA playoffs*. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1984 NBA playoffs
- Wikimedia Foundation. (2023, February 20). *1990 NBA playoffs*. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1990 NBA playoffs
- Wikimedia Foundation. (2023, February 20). *1994 NBA playoffs*. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1994 NBA playoffs
- Wikimedia Foundation. (2023, February 20). *1995 Stanley Cup playoffs*. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1995 Stanley Cup playoffs
- Wikimedia Foundation. (2023, February 20). 1996 NBA playoffs. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1996_NBA_playoffs
- Wikimedia Foundation. (2023, February 20). *1997 Stanley Cup playoffs*. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1997 Stanley Cup playoffs
- Wikimedia Foundation. (2023, February 20). *1998 NBA playoffs*. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1998 NBA playoffs
- Wikimedia Foundation. (2023, February 20). 1998 Stanley Cup Playoffs. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1998_Stanley_Cup_playoffs
- Wikimedia Foundation. (2023, February 20). 2001 Stanley Cup playoffs. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/2001_Stanley_Cup_playoffs
- Wikimedia Foundation. (2023, February 20). 2004 Stanley Cup playoffs. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/2004 Stanley Cup playoffs
- Wikimedia Foundation. (2023, February 20). 2006 Stanley Cup playoffs. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/2006 Stanley Cup playoffs

- Wikimedia Foundation. (2023, February 20). 2009 NBA playoffs. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/2009_NBA_playoffs
- Wikimedia Foundation. (2023, February 20). 2012 Stanley Cup playoffs. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/2012 Stanley Cup playoffs
- Wikimedia Foundation. (2023, February 20). 2016 Stanley Cup playoffs. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/2016 Stanley Cup playoffs
- Wikimedia Foundation. (2023, February 20). 2017 NBA playoffs. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/2017 NBA playoffs
- Wikimedia Foundation. (2023, February 20). 2018 NBA playoffs. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/2018 NBA playoffs
- Wikimedia Foundation. (2023, February 20). *Raymond James Stadium*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/Raymond James Stadium#Naming
- Wikimedia Foundation. (2023, February 20). *T-mobile us*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/T-Mobile_US
- Wikimedia Foundation. (2023, February 21). *NRG stadium*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/NRG_Stadium
- Wikimedia Foundation. (2023, February 21). *Petco Park*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/Petco Park
- Wikimedia Foundation. (2023, February 22). *MetLife Stadium*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/MetLife Stadium
- Wikimedia Foundation. (2023, February 4). 2020 NBA playoffs. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/2020_NBA_playoffs
- Wikimedia Foundation. (2023, February 4). *Lucas Oil Stadium*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/Lucas_Oil_Stadium
- Wikimedia Foundation. (2023, February 6). *Bank of America Stadium*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/Bank_of_America_Stadium#Naming_rights

- Wikimedia Foundation. (2023, February 6). *Comerica Park*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/Comerica_Park
- Wikimedia Foundation. (2023, February 8). *Acrisure stadium*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/Acrisure Stadium
- Wikimedia Foundation. (2023, January 10). *1994 Major League Baseball season*. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/1994_Major_League_Baseball_season
- Wikimedia Foundation. (2023, January 23). *Lumen field*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/Lumen Field
- Wikimedia Foundation. (2023, January 23). *M&T Bank Stadium*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/M%26T_Bank_Stadium
- Wikimedia Foundation. (2023, January 30). 2018 Major League Baseball season. Wikipedia. Retrieved February 22, 2023, from https://en.wikipedia.org/wiki/2018_Major_League_Baseball_season
- Wikimedia Foundation. (2023, January 8). *American Family Field*. Wikipedia. Retrieved February 21, 2023, from https://en.wikipedia.org/wiki/American_Family_Field
- Woolfolk, J., & Nakaso, D. (2016, August 13). *Hp Pavilion surprise: Home of san jose sharks could get new name*. The Mercury News. Retrieved February 22, 2023, from https://www.mercurynews.com/2013/03/26/hp-pavilion-surprise-home-of-san-jose-sharks-could-get-new-name/
- Zygmont, Z. X., & Leadley, J. C. (2005). When is the honeymoon over? Major League Baseball Attendance 1970-2000. *Journal of Sport Management*, 19(3), 278–299. https://doi.org/10.1123/jsm.19.3.278
- DeSchriver, T. D., & Jensen, P. E. (n.d.). What's in a name? price variation in sport facility naming rights. Retrieved February 22, 2023, from https://college.holycross.edu/RePEc/eej/Archive/Volume29/V29N3P359_376.pdf